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**TRANSMITTAL  
FORM**

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Total Number of Pages in This Submission

Application Number 10/667,014

Filing Date September 17, 2003

First Named Inventor John M. Calico

Art Unit 3729

Examiner Name Thiem D. Phan

Attorney Docket Number MD-349

**ENCLOSURES (Check all that apply)**

- |   |   |   |
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| <input type="checkbox"/> Fee Attached                                     | <input type="checkbox"/> Licensing-related Papers                         | <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences     |
| <input type="checkbox"/> Amendment/Reply                                  | <input type="checkbox"/> Petition   | <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) |
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Remarks

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm Name	Phillips Lytle LLP		
Signature			
Printed name	Peter K. Sommer, Esq.		
Date	August 14, 2006	Reg. No.	26,587

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

*In re Application of:*

*Applicant:* John M. Calico

*Appl'n. No.:* 10/667,014

*Group No.* 3729

*Filed:* September 17, 2003

*Examiner:* Thiem D. Phan

*For:* STATOR FOR AN ELECTRIC DEVICE

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Commissioner for Patents  
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**CORRECTED APPEAL BRIEF**

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THE UNITED STATES PATENT AND TRADEMARK OFFICE  
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## **CORRECTED APPEAL BRIEF**

Sir:

This brief is in furtherance of the Notice of Appeal filed in this case on April 7, 2006.

The fees required under 37 C.F.R. § 41.20, and any required petition for extension of time for filing this brief and fees therefor, are dealt with in the accompanying Transmittal of Appeal Brief.

### **I. Real Party in Interest**

The real party in interest in this appeal is Moog Inc., a New York corporation, having a principal place of business located at Seneca Street and Jamison Road, East Aurora, New York 14052.

Moog Inc. is the assignee of the entire right, title and interest in and to the subject application by various mesne assignments.

### **II. Related Appeals and Interferences**

There are no other appeals or interferences that will directly affect, be directly affected by, or

have a bearing on, the Board's decision in this appeal.

### **III. Status of Claims**

#### **A. Total Number of Claims in Application**

Claims in the application are: 31 and 34-37

#### **B. Status of All the Claims**

1. Claims cancelled: 1-30 and 32-33.
2. Claims withdrawn from consideration but not cancelled: None
3. Claims objected to: none
4. Claims allowed or confirmed: none
5. Claims rejected: 31 and 34-37

#### **C. Claims on Appeal**

The claims on appeal are: 31 and 34-37

### **IV. Status of Amendments**

Applicant filed an Amendment After Final Rejection with the Notice of Appeal. This amendment corrected an obvious error in claim 31, and simply presented the claims in better form for the purposes of appeal. In an Advisory Action mailed April 19, 2006, the Examiner indicated that the Amendment After Final Rejection would not be entered. On or about May 3, 2006, Applicant filed a Petition to the Director seeking to direct the entry of the Amendment After Final Rejection.

Thereafter, Applicant received a Notification of Non-Compliant Appeal Brief mailed July 31, 2006.

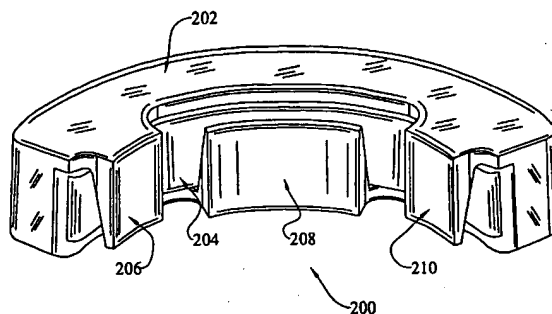
During a telephone conference on August 11, 2006, Supervisory Patent Examiner Peter Vo: (1) indicated that Applicant's Brief does contain a statement of the status of all claims in compliance with 37 C.F.R. § 41.37(c) (1)(iii) (*i.e.*, Point 2 in the Notification of Non-Compliant Appeal Brief),

(2) indicated that Applicant's Brief should contain appendix of the appealed claims with the appropriate status indicator (*i.e.*, "Previously Presented", etc.) per 37 C.F.R. § 41.37(c)(1)(viii); and (3) that he had directed the entry of the Amendment After Final Rejection, thereby mooting the Petition to the Director.

Accordingly, all amendments have been entered.

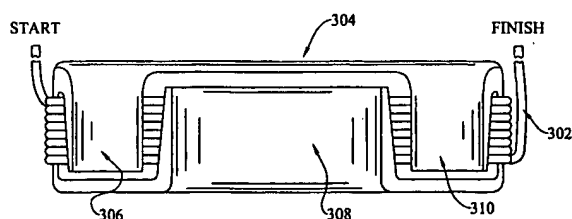
## V. Summary of Claimed Subject Matter

This invention relates to a method of forming an electric motor. An annular stator is formed by assembling a plurality of arcuate stator segments (200), such as shown in Fig. 2. Each segment is an arcuate member having a concave surface (*i.e.*, facing toward the reader), a convex surface (*i.e.*, facing away from the reader), and left and right end surfaces joining the margins of the concave and convex surfaces. A plurality of teeth (206, 208, 210) extending radially inwardly from the concave surface.

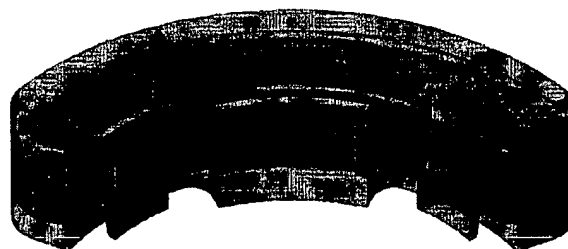


*Fig. 2 of Applicant's Specification*

Each segment has an electrical winding therewithin that generally follows the contour of the segment; *i.e.*, it has various portions that are arranged adjacent the concave, convex and end surfaces of the associated segment.

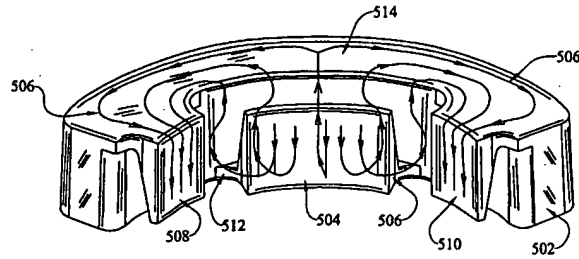


*Fig. 3D of Applicant's Specification  
(Two Tooth Embodiment)*



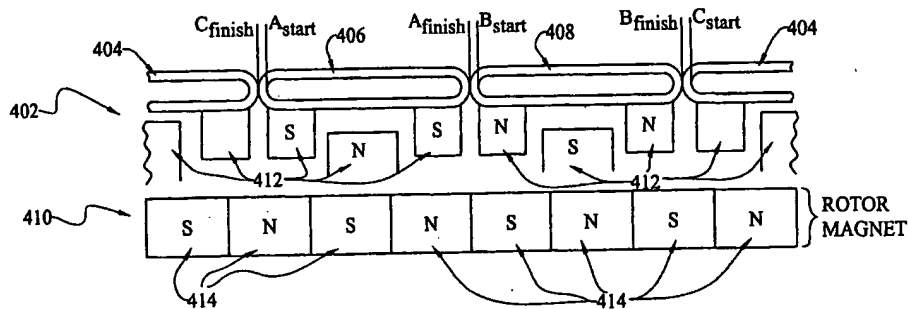
*Perspective View of Segment  
(Three Tooth Embodiment)*

Thus, each segment has its own individual winding, and each winding is adapted to be selectively energized to produce a three-dimensional magnetic field about such segment, as shown in Fig. 5.



*Fig. 5 of Applicant's Specification*

The segments are assembled to form an annular stator. A single-phase current is provided to each winding that is different from the phase of the current supplied to the windings of the adjacent segments, as schematically illustrated in the linearized view of Fig. 4:



*Fig. 4 of Applicant's Specification*

Independent claim 31 is reproduced herebelow, and is annotated with parenthetical reference to the corresponding parts, portions or surfaces of the disclosed embodiment for purposes of illustration:

"31. The method of forming an electric motor, comprising the steps of:

forming a plurality of arcuate stator segments (200), each segment having a concave surface, a convex surface, opposite end surfaces, and a plurality of teeth (206, 208, 210) extending inwardly from said concave surface;

providing a separate electrical winding (204) for each segment, each winding having different portions that are arranged adjacent said concave, convex and end surfaces of the associated segment, said winding being adapted to be selectively energized to form a three-dimensional magnetic field about said segment;

assembling said segments to form an annular stator; and



placing a rotor within said stator, said stator having at least two magnetic poles that are arranged to interact with the magnetic field in said stator." (Parenthetical reference added)

## **VI. Grounds of Rejection to Be Reviewed on Appeal**

Whether claims 31 and 34-37 were properly rejected under 35 U.S.C. § 102(b) as being anticipated by Huang (U.S. Pat. No. 5,592,731)?

## **VII. ARGUMENT**

### **A. Rejections under 35 U.S.C. § 102**

Of the appealed claims, only claim 31 is in independent form. Claims 34-37 are severally dependent on independent claim 1, and are to be construed as incorporating by reference all of the limitations of that main claim. (35 U.S.C. § 112, para. 4). Hence, the initial focus is on independent claim 31. If this claim distinguishes patentably from the prior art, then each of the trailing dependent claims must similarly so distinguish. *Ex parte Leavell*, 212 USPQ 762 (Bd. App. 1979) ["where a dependent claim is based upon an allowed parent claim, . . . , such should have been considered allowable by the examiner for the same reasons as the parent claim"]. On the other hand, if the Board sustains the rejection of independent claim 31, then the patentability of each of the dependent claims must be separately determined.

#### **(1) Independent Claim 31 Is Not Anticipated**

Claim 31 provides:

"31. The method of forming an electric motor, comprising the steps of:

forming a plurality of arcuate stator segments, each segment having a concave surface, a convex surface, opposite end surfaces, and a plurality of teeth extending inwardly from said concave surface;

providing a separate electrical winding for each segment, each winding having different portions that are arranged adjacent said concave, convex and end surfaces of the associated segment, said winding being adapted to be selectively energized to form a three-dimensional magnetic field about said segment;

assembling said segments to form an annular stator; and  
placing a rotor within said stator, said stator having at least two  
magnetic poles that are arranged to interact with the magnetic field in  
said stator."

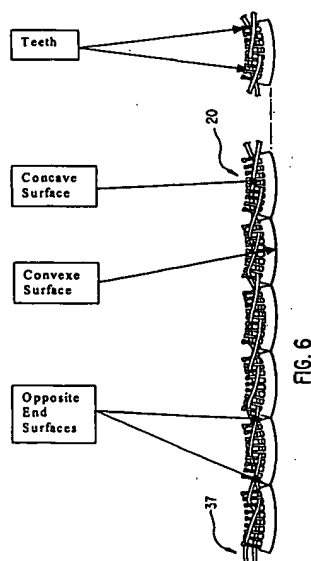
The Examiner rejected claims 31 and 34-36, saying:

"Claims 31 and 34-36 are rejected under 35 U.S.C. 102(b) as  
being anticipated by Huang et al (US 5,592,731)

As applied to claim 31, Huang et al teach a method of constructing a stator, comprising:

- forming a plurality of arcuate stator segments (Fig. 6, 20), each segment having a concave surface (Fig. 6, see below), convex surface (Fig. 6, see below), opposite end surfaces (Fig. 6, see below), and a plurality of teeth (Fig. 6, see below) extending inwardly from said concave surface;
- providing a separate electrical winding (Fig. 6, 37) for each segment, each winding having different portions that are arranged adjacent said concave, convex and end surfaces of the winding, said winding being adapted to be selectively energized to form a three-dimensional magnetic field about said segment;
- assembling said segments to form an annular stator (Fig. 5, 50); and
- placing a rotor within said stator (Abstract), said stator having at least two magnetic poles (Col. 2, lines 12-15) that are arranged to interact with the magnetic field in said stator." (Emphasis added)

The Examiner then provided the drawing, derived from Fig. 6 of Huang, as shown below:



The standards for "anticipation" are well settled: to "anticipate", a single reference must describe all of the elements or limitations of the claim, and must enable one skilled in the art to make and use the claimed invention. *See, e.g., Glaverbel Société Anonyme v. Northlake Marketing & Supply, Inc.*, 45 F.3d 1550, 1554, 33 USPQ2d 1496, 1498 (Fed. Cir. 1995) ["Anticipation requires identity of the claimed process and a process of the prior art; the claimed process, including each step thereof, must have been described or embodied, either expressly or inherently, in a single reference"; "Anticipation . . . requires identity of invention: the claimed invention, as described in appropriately construed claims, must be the same as that of the reference, in order to anticipate."].

As noted above, claim 31 specifically requires the step of providing a separate electrical winding for each stator segment, with the further requirement that each such winding have different portions that are arranged adjacent the concave, convex and end surfaces of the associated segment.

Huang *et al.* discloses the method of constructing a stator by assembling a plurality of stator segments to form an arcuate stator. However, as clearly shown in Fig. 6, the very figured relied on by the Examiner, Huang *et al.* provides a single winding that weaves in and out of the teeth of the various rotor segments forming the stator assembly. Contrary to the position taken by the Examiner, Huang *et al.* does not disclose the provision of a separate electrical winding for each segment. Thus, Huang *et al.* does not anticipate claim 31.<sup>1</sup>

Accordingly, the rejection of claim 31 must be reversed.

---

<sup>1</sup>The summary and cavalier nature of the Examiner's action is illustrated by his statement in the Office Action of February 9, 2005:

"Applicant's arguments (filed on 11/17/05) with respect to claims 31 and 34-36 have been considered but are moot in view of the new grounds for rejection."

However, in actual fact, the Examiner has, in substance simply repeated his earlier rejection in the Office Action of September 22, 2005. The arguments expressed herein were presented in Applicant's Amendment filed on November 17, 2005.

Thus, the Examiner has simply brushed aside Applicant's earlier argument, and has simply restated his earlier rejection.

## **(2) Dependent Claims 34-37 Are Not Anticipated**

The various dependent claims distinguish from the Huang *et al.* reference in the same manner as claim 31. In addition, each of the various dependent claims recites additional details and further limitations on the structure.

### **(a) Claim 34**

Claim 34 provides:

"34. The method as set forth in claim 31 wherein said winding is embedded within the associated stator segment."

The Examiner rejected claim 34, saying:

"As applied to claim 34, Huang et al. teach that the winding (Fig. 6, 37) is embedded within the associated stator segment."

This statement is simply not true. Rather, as clearly shown in Fig. 6 of Huang *et al.*, the reference teaches that the single winding 37 may be woven between and among the teeth of the various stator segments. This reference does not disclose that a winding may be embedded within the associated stator segment.

### **(b) Claim 35**

Claim 35 provides:

"35. The method as set forth in claim 31 wherein said winding is mounted on the associated stator segment."

The Examiner rejected claim 35, saying:

"As applied to claim 35, Huang et al. teach that the winding (Fig. 6, 37) is mounted on the associated stator segment."

Claim 35 distinguishes from Huang *et al.* in the same manner as claim 31, namely, that claim 31 specifically requires that there be a separate winding for each stator segment. This is not taught by Huang *et al.*

(c) **Claim 36**

Claim 36 provides:

"36. The method as set forth in claim 31 wherein said rotor has a permanent magnet, and wherein said magnetic poles on said rotor are created by the poles on said magnet."

The Examiner rejected claim 36, saying:

**"As applied to claim 36**, Huang et al. teach that the rotor has a permanent magnet (Col. 2, lines 12-14), and wherein said magnetic poles on said rotor are created by the poles on said magnet."

As indicated above, claim 36 distinguishes from Huang *et al.* in the same manner as claim 31, namely with respect to the specific requirement for a separate winding for each stator segment. This feature is not taught or suggested by Huang *et al.*

(d) **Claim 37**

Claim 37 provides:

"37. The method as set forth in claim 31 and further comprising the additional step of:  
supplying a single phase current to each stator winding that is different from the phase of the current supplied to the winding of each adjacent segment."

The Examiner rejected claim 37, saying:

**"As applied to claim 37**, Huang et al. teach that the single phase current to each stator winding is different from the phase of the current supplied to the winding of each adjacent segment as the windings through the poles of each segment (Fig. 6, 20) are different from each other (Fig. 6, 37)."

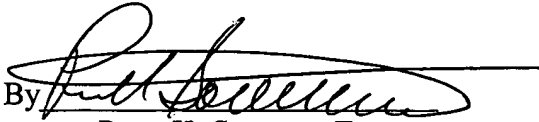
The Examiner's statement is clearly in error. There is simply nothing in the Huang *et al.* references that teaches that each stator segment should have its own individual winding, or that the phase of current supplied to the winding of one segment should be different from the phase of the current supplied to each adjacent segment.

**Conclusion**

For the foregoing reasons, the Examiner's rejection of claims 31 and 34-37 should be reversed.

Respectfully submitted,

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Dated: August 14, 2006

### **VIII. Appendix of Claims**

The texts of the claims involved in this appeal are:

Claim 31 (previously presented): The method of forming an electric motor, comprising the steps of:

forming a plurality of arcuate stator segments, each segment having a concave surface, a convex surface, opposite end surfaces, and a plurality of teeth extending inwardly from said concave surface;

providing a separate electrical winding for each segment, each winding having different portions that are arranged adjacent said concave, convex and end surfaces of the associated segment, said winding being adapted to be selectively energized to form a three-dimensional magnetic field about said segment;

assembling said segments to form an annular stator; and

placing a rotor within said stator, said stator having at least two magnetic poles that are arranged to interact with the magnetic field in said stator.

Claim 34 (previously presented): The method as set forth in claim 31 wherein said winding is embedded within the associated stator segment.

Claim 35 (previously presented): The method as set forth in claim 31 wherein said winding is mounted on the associated stator segment.

Claim 36 (previously presented): The method as set forth in claim 31 wherein said rotor has a permanent magnet, and wherein said magnetic poles on said rotor are created by the poles on said magnet.

Claim 37 (previously presented): The method as set forth in claim 31 and further comprising the additional step of:

supplying a single phase current to each stator winding that is different from the phase of the

current supplied to the winding of each adjacent segment.



## **IX. Appendix of Evidence**

A convenience copy of the Huang *et al.* reference cited by the Examiner are attached.

**X. Appendix of Related Decisions**

None.

Bflo#1597094.1